

IN THE CLAIMS:

1 1. (Cancelled)

1 2. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing the plurality of nodes with means for connecting and discon-
6 necting communications paths between a plurality of ports having digital network/line
7 interfaces that couple the node with the PSTN and private networks, said nodes including
8 switching nodes that can switch communications to any port connected to the system, and
9 at least two of said switching nodes being conferencing nodes, said conferencing nodes
10 including individual digital signal processing (DSP) circuits programmed to perform a
11 conference between three or more participants who are callers connected at any port in
12 the system and said conferencing nodes are also capable of switching communications,
13 including conferenced output to any other port interfaced with the system from the PSTN
14 and private networks, and said switching nodes, including said conferencing nodes, hav-
15 ing switching buses on which that node is assigned time slots for transmitting and receiv-
16 ing data and control information and said switching nodes, including said conferencing
17 nodes, being connected in communicating relationship by an inter-nodal network;

18 (B) coupling one or more participants to said PSTN and private networks via a
19 telecommunication device, without requiring that said coupling to be made via Internet
20 connection;

21 [[(B)]] (C) at the time of request, defining a requested conference as being of one
22 of a dynamic conference type, a critical conference type and a static conference type;
23 [[(C)]] (D) identifying the DSP circuit within a conferencing node that satisfies at least
24 one of the following:

25 (i) the greatest amount of available channels in said system so that the
26 conference can grow as large as possible;

27 (ii) is currently handling no other conferences so that all channels are
28 available for use by the conference; and

29 (iii) has a “best fit” such that the system can attempt to fit as many con-
30 ferences as possible on a single DSP chip before assigning confer-
31 ences to another DSP chip; and

32 [[(D)]] (E) after one or more of said DSP circuits have been identified, determin-
33 ing whether the node in which said identified DSP circuit is located has sufficient avail-
34 able time slots on its switching bus to manage the data to and from all of the participants
35 in the requested conference.

1 3. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing the plurality of nodes with means for connecting and discon-
6 necting communications paths between a plurality of ports having digital network/line
7 interfaces that couple the node with the PSTN and private networks, said nodes including
8 switching nodes that can switch communications to any port connected to the system, and
9 at least two of said switching nodes being conferencing nodes, said conferencing nodes
10 including individual digital signal processing (DSP) circuits programmed to perform a
11 conference between three or more participants who are callers connected at any port in
12 the system, and said switching nodes having switching buses on which that node is as-
13 signed time slots for transmitting and receiving data and control information and said
14 switching nodes being connected in communicating relationship by an inter-nodal net-
15 work;

16 (B) defining a requested conference as being of one of a dynamic conference
17 type, a critical conference type and a static conference type, including determining con-

18 ference type by employing statistical analysis and/or historical data about past system
19 conference behavior in said statistical analysis to predict conference type;

20 (C) identifying the DSP circuit within a conferencing node that has available
21 resources for performing a conferencing function for a conference of that type as re-
22 quested in the system[]; and

23 (D) after said DSP circuit has been identified, determining whether the node in
24 which said identified DSP circuit is located has sufficient available time slots on its
25 switching bus to manage the data to and from all of the participants in the requested con-
26 ference.

1 4. (Cancelled)

1 5. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 2, including the further step of employing user-defined parameters to de-
3 termine conference type.

1 6. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 3, including the further step of using historical information about an aver-
3 age conference generally handled by a particular system and handled at a particular port
4 to predict conference type.

1 7. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2, including the further step of defining as said dynamic conference a conference
3 that is likely to change in size based upon predetermined criteria.

1 8. (Previously Presented) The method of providing conferencing services as defined
2 in claim 7, including the further step of assigning the DSP circuit card having the maxi-
3 mum available capacity to a conference which has been identified as a dynamic confer-
4 ence.

- 1 9. (Previously Presented) The method of providing conferencing services as defined
2 in claim 8, including the further step of selecting for a dynamic conference the DSP cir-
3 cuit in the system having as many channels as possible such that a conference can grow
4 as large as possible and that channels remain available for participants who join the con-
5 ference while in progress.
- 1 10. (Previously Presented) The method of providing conferencing services as defined
2 in claim 2 including the further step of defining as said critical conference a conference
3 that requires the maximum opportunity for growth in the system.
- 1 11. (Previously Presented) The method of providing conferencing services as defined
2 in claim 10 including the further step of selecting, for a critical conference, the DSP cir-
3 cuit with the maximum available capacity and instructing the DSP circuit with said
4 maximum available capacity to reserve these conference resources and to establish the
5 conference, and further instructing the DSP circuit to block other conferences from being
6 assigned to that DSP circuit such that capacity remains available for that critical confer-
7 ence, for the life of that critical conference.
- 1 12. (Previously Presented) The method of providing conferencing services as defined
2 in claim 11 including the further step of revealing blocked channels for use by the DSP
3 circuit, after the critical conference is finished.
- 1 13. (Previously Presented) The method of providing conferencing services as de-
2 fined in claim 2, including the further step of defining as said static conference a confer-
3 ence in which the number of participants will remain substantially constant.
- 1 14. (Previously Presented) The method of providing conferencing services as defined
2 in claim 13, including the further step of assigning a static conference to a DSP circuit on
3 a “best fit” basis.

1 15. (Currently Amended) A method of providing conferencing resources in an ex-
2 pandable telecommunications system having a plurality of nodes, and a host coupled to at
3 least one node for controlling the system in which conferencing resources are utilized by
4 one or more nodes participating in a conference, the method including the steps of:

5 (A) providing said telecommunications system with a line-to-switch
6 (LSD) data bus comprised of multiple individual bus conductors, each bus con-
7 ductor carrying time slots coming into the node from line cards, including T1 line
8 cards, and said system further including a switch-to-line (SLD) data bus com-
9 prised of multiple individual bus conductors that carry time slots of PCM-encoded
10 data from a nodal switch in the node back out to a destination line card;

11 (B) defining a requested conference as being of one of a dynamic con-
12 ference type, a critical conference type and a static conference type;

13 (C) identifying the DSP circuit within a conferencing node that has
14 available resources for performing a conferencing function for a conference of the
15 type requested; and

16 (D) identifying a zone of time slots having the lowest order of alloca-
17 tion such that it is least likely to be taken when a new T1 card is inserted into the
18 system during operation, and assigning a conferencing node to use these lowest
19 orders of allocation time slots for a requested conference.

1 16. (Previously Presented) The method of providing conferencing resources as de-
2 fined in claim 15, including the step of:

3 (a) allocating zones of time slots in such a manner that 192 time slots of a T1
4 span are divided into the following segments:

5 time slots 0-191 are in the regular T1 channel;

6 time slots 192-215 are the lower dead zone;

7 time slots 216-223 are in the lower small dead zone;

8 time slots 224-247 are in the upper large dead zone; and

9 time slots 248-255 are in the upper small dead zone; and

10 (b) assigning time slots in the lower and upper small dead zones of the individual bus conductors to conferences.

1 17. (Cancelled)

1 18. (Currently Amended) An expandable telecommunications system having means
2 for conferencing three or more participants interfaced with the system, the system comprising:

4 (A) a plurality of nodes for performing telecommunications switching, each of
5 said switching nodes including means for dynamically connecting or disconnecting
6 communication paths with respect to various ones of a plurality of ports, means for time
7 switching information to or from said ports, means for coupling the node with the PSTN
8 and private networks via digital network/line interfaces, said nodes including switching
9 nodes that can switch communications to any port connected to the system via the PSTN
10 and private networks, and means for transmitting and receiving information in packetized
11 form, and means connected in communicating relationships including a bus for carrying
12 data to and from said ports;

13 (B) a host connected in communicating relationship with at least one of said
14 switching nodes, said host controlling predetermined operations of the system;

15 (C) means in said switching nodes for generating and sending a message re-
16 questing establishment of a conference call for at least three conferees connected to one
17 or more of said nodes;

18 (D) means for interconnecting said switching nodes in communicating rela-
19 tionships and operable in conjunction with said transmitting and receiving means to trans-
20 fer said packetized information such that information which originates from any port in
21 the switching nodes is substantially continuously communicable to any node interfaced
22 with said interconnecting means;

23 (E) at least one conferencing node for providing conferencing services, said at
24 least one conferencing node interfaced with said interconnecting means and including
25 individual DSP circuits, said conferencing node also having means for switching com-

26 munications, including conferenced output to any other port interfaced with the system
27 from the PSTN and private networks; and

28 (F) means for allocating conferencing resources including:

29 1. means for determining whether a DSP circuit in a conferencing
30 node has available conferencing resources to perform a requested conference; and
31 2. means for determining whether the conferencing node has suffi-
32 cient available time slots on its switching buses to manage the data to and from the con-
33 ferences or a particular requested conference [[The expandable telecommunications sys-
34 tem as defined in claim 17 further comprising:]]

35 [[A.]] G. a DSP card in said conferencing node, including:

36 1. a DSP module which contains a plurality of DSP circuits; and
37 2. a CPU including means for receiving messages about conferences
38 to be established, and means for routing voice information to a DSP chip identified for a
39 particular conference; and

40 [[B.]] H. line-to-switch (LSD) data bus interfaced with line cards which
41 connect ports in the system, and which carries a PCM-encoded voice information from
42 the line cards to said DSP cards.

1 19. (Previously Presented) The expandable telecommunications system as defined in
2 claim 18 wherein said voice information for paid conference arrives at a port coupled
3 with one or more of the following:

4 a. a landline telephone;
5 b. the PSTN;
6 c. a private network;
7 d. a wireless network; and
8 e. the Internet.

1 20. (New) A method of providing conferencing resources in a telecommunications
2 system, including the steps of:

3 (A) coupling a participant with a telecommunications device without requiring
4 that said coupling include an Internet connection, including:

9 (B) at the time of a conference request, defining a conference as being one of a
10 dynamic conference type, a critical conference type and a static conference type; and

11 (C) assigning resources within said telecommunications switching system by
12 identifying a node having a DSP circuit that has sufficient available channels to accom-
13 modate the conference as defined.

1 21. (New) The method of providing conferencing resources in a telecommunications
2 system as defined in claim 20, including the further step of:

3 assigning said resources to a DSP circuit that satisfies at least one of the following
4 conditions:

5 (a) has the greatest amount of currently available channels in said sys-
6 tem so that the conference can grow as large as possible;
7 (b) is currently handling no other conferences so that all channels are
8 available for use by the conference; and
9 (c) has a “best fit” such that the system can attempt to fit as many con-
10 ferences as possible on a single DSP chip before assigning conferences to
11 another DSP chip.